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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/729,888 | 12/05/2003 | Todd D. Wakefield | 03760.021/5138 P | 9224 |
| 7590 Parsons Behle & Latimer Suite 1800 201 South Main Street Salt Lake City, UT 84111 | | | EXAMINER CAO, PHUONG THAO | |
| | | | ART UNIT 2164 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | | MAIL DATE | DELIVERY MODE |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/729,888

Applicant(s)

WAKEFIELD ET AL.

Examiner

Phuong-Thao Cao

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Amendment filed on 12/01/2006.
2. Claims 1, 13 and 15 have been amended. Currently, claims 1-28 are pending.

Terminal Disclaimer

3. The terminal disclaimer for this application has been disapproved because the application/patent numbers, which form the basis for double patenting, must be mentioned in an office action. Note that there is no double patenting rejection in the previous office action.

The examiner notes the fact that the Terminal Disclaimer cited application 10/729,721. The examiner assumes that the Applicants intended to cite application 10/728,721

Response to Arguments

4. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

5. Claims 2-14 and 16-28 are rejected as being of improper dependent form. The "A" at the beginning of each claim should be deleted and replaced by the "The".

6. Claims 5 and 19 are objected to because of the following informalities: phrase “to the location reference by” in line 7 of claim should be changed to “in the location referenced by”; similarly, phrase “to the location reference by” in line 6 of claim 19 should be changed to “in the location referenced by”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "said input device set" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-4, 6-18 and 20-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 1 and 15, these claims recite the process of integrating of structured and unstructured data, but fail to recite a tangible result.

For a result to be tangible, it must be more than just a thought or a computation; it must have real-world value rather than an abstract result. What has been generated, determined, calculated, selected or decided, etc. without using what has been generated, determined, calculated, selected, decided, etc. in a disclosed practical application or at least making what has been generated, determined, calculated, selected, decided, etc. available for use through some form of conveyance (for example, display, print, sound, transmission, etc.) or at least temporary storage somewhere is not considered a tangible result. Processing data in memory such as “integrating the produced data with the data tuples of the structured data” is not considered as tangible result until the result data is at least stored or displayed. Note that the limitations of claims 5 and 19 are not rejected, since they recite the function of storing the new database which contains the integrated data.

Claims 2-4, 6-14, 16-18 and 20-28 are rejected as incorporating the deficiencies of claims 1 and 15 upon which they depend.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-3, 5-17 and 19-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Rao et al. (Publication No US 2003/0120458).

As to claim 1, Rao et al. teaches:

“A system for providing a service to integrate structured and unstructured data” (see Abstract and Fig. 3), comprising:

“a processing element” (see [0029]);

“one or more data access ports, said ports providing access to data by said processing element” (see [0029]-[0030]);

“a set of one or more input devices readable by said processing element” (see [0029]);

“a storage device, said storage device containing instructions executable by said processing element to perform the functions of” (see [0026] and [0027]):

“reading a first access reference through said input device set, the first access reference referencing a customer’s database of structured data containing a set of data tuples” (see [0033]-

[0034] for ability to retrieve data from a CPR wherein financial database is an example of database of structured data);

“reading a second access reference through said input device set, the second access reference referencing a customer’s source of unstructured data, the unstructured data including free text relatable to the data tuples of the structured data” (see [0033]-[0034] for ability to retrieve data from a CPR including unstructured data source wherein unstructured data of a patient is relatable to structured data of the patient);

“accessing the source of unstructured data through said second access reference” (see [0033] and [0034] for the disclosure of retrieval);

“interpreting the free text of the unstructured data to produce a set of construed data reflecting at least on multiple-dimensional relational fact conveyed in the free text, each multi-dimensional relational fact including a plurality of attributes extracted from the free text, each construed datum relatable to a data tuple of the structured data” (see [0035]-[0037], [0042] and [0043] wherein any text source or combination of many text sources in the patient medical record can be considered as equivalent to Applicant’s “free text”, probabilistic assertions (elements) about a patient and produced from the extraction component are equivalent to Applicant’s “multi-dimensional relational facts”, each element includes a plurality of attributes such as “name”, “value” and “confidence” a set of patient states is equivalent to Applicant’s “a set of construed data”, and each patient state is related to the particular patient medical record as well as other structured data in the same patient medical record);

“accessing the database of structured data” (see [0008] and [0045]); and

“integrating the produced data with the data tuples of the structured data” (see Fig. 3 and [0070]-[0071] wherein the structured CPR including both mined patient information (Applicant’s “produced data”) and patient information extracted from structured data source, etc. (Applicant’s “structured data”)).

As to claim 15, Rao et al. teaches:

“A method of providing a service to integrate structured and unstructured data” (see Abstract and Fig. 3), comprising the steps of:

“reading a first access reference from computer-readable storage media, the first access reference referencing a customer’s database of structured data containing a set of data tuples” (see [0033]-[0034] for ability to retrieve data from a CPR wherein financial database is an example of database of structured data);

“reading a second access reference from computer readable storage media, the second access reference referencing a customer’s source of unstructured data, the unstructured data including free text relatable to the data tuples of the structured data” (see [0033]-[0034] for ability to retrieve data from a CPR including unstructured data source wherein unstructured data of a patient is relatable to structured data of the patient);

“accessing a source of unstructured data in said second access reference” (see [0033] and [0034] for the disclosure of retrieval);

“interpreting the free text of the unstructured data to produce a set of construed data reflecting at least on multiple-dimensional relational fact conveyed in the free text, each multi-dimensional relational fact including a plurality of attributes extracted from the free text, each

construed datum relatable to the structured data” (see [0035]-[0037], [0042] and [0043] wherein any text source or combination of many text sources in the patient medical record can be considered as equivalent to Applicant’s “free text”, probabilistic assertions (elements) about a patient and produced from the extraction component are equivalent to Applicant’s “multi-dimensional relational facts”, each element includes a plurality of attributes such as “name”, “value” and “confidence” a set of patient states is equivalent to Applicant’s “a set of construed data”, and each patient state is related to the particular patient medical record as well as other structured data in the same patient medical record);

“accessing the database of structured data” (see [0008] and [0045]); and

“integrating the produced data with the structured data” (see Fig. 3 and [0070]-[0071] wherein the structured CPR including both mined patient information (Applicant’s “produced data”) and patient information extracted from structured data source, etc. (Applicant’s “structured data”)).

As to claims 2 and 16, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“accessing the source of unstructured data accesses text contained within the database of structured data” (see [0033] and [0034] wherein computerized patient record (CPR) is considered as a source or database contained both structured and unstructured data”).

As to claims 3 and 17, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“wherein said first access reference and second access reference separate data sources” (see [0034] wherein a pharmacy database and a free text document can be referenced by two different access references).

As to claims 5 and 19, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“reading a storage reference through said input device set, the storage reference providing a location for a product database” ([0035] for the creation of structured CPR);

“producing a new database containing the integrated data produced by said integrating” (see [0035] and [0071] wherein structured CPR is equivalent to Applicant’s “new database”);
and

“storing the new database to the location reference by the storage reference” (see [0035] and [0070] for storing which inherently includes a storage reference to allow access as disclosed [0069]).

As to claims 6 and 20, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“inserting the produced data into the database of structured data referencing by the first access reference while performing said integrating step” (see Abstract, Fig. 3, [0035] and [0071] for populating the structured CPR wherein structured CPR is equivalent to Applicant’s “database of structured data”).

As to claims 7 and 21, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“producing a new database containing the integrated data” (see Abstract, Fig. 3 and [0071] wherein structured CPR is equivalent to Applicant’s “new database”).

As to claims 8 and 22, these claims are rejected based on arguments given above for rejected claims 7 and 21 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“produce a new relational database containing the integrated data produced by said integrating” (see [0034] for the disclosure of maintaining patient information in databases tables which is equivalent to Applicant’s “relational database”).

As to claims 9 and 23, these claims are rejected based on arguments given above for rejected claims 7 and 21 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“produce a file containing the integrated data” (see [0069]-[0071] wherein created structured clinical information must be stored as file).

As to claims 10 and 24, these claims are rejected based on arguments given above for rejected claims 9 and 23 respectively, and are similarly rejected including the following:

Rao et al. teach:

“produce a file having a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structure” (see Fig. 2 for CPR as file-based database structures).

As to claims 11 and 25, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teach:

“store an integrated database while performing said integrating the produced data” (see [0035] for storing mined information in structured CPR wherein structured CPR is equivalent to Applicant’s “integrated database”).

As to claims 12 and 26, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

“wherein the integrated data produced by the performance of said integrating the produced data includes reference information to the original free text for construed data” (see

[0071] wherein information to identify individual patient represent a reference from information of a patient in the structured CPR (equivalent to Applicant's "integrated information") to the patient record in the CPR (equivalent to Applicant's "original free text").

As to claim 13, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

"perform analytic processing of the integrated data" (see [0071] wherein patient information used to populate the structured CPR is equivalent to Applicant's "integrated data").

As to claims 14 and 28, these claims are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. teaches:

"render a visual representation all or a part of the integrated data" (see [0069] and [0071]).

As to claim 27, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

"data mining the integrated data" (see [0071]).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al. (Publication No US 2003/0120458) as applied to claims 1 and 15 respectively above, and further in view of Gaizauskas et al. ("Information Extraction: Beyond Document Retrieval", 1998).

As to claims 4 and 18, these claim are rejected based on arguments given above for rejected claims 1 and 15 respectively, and are similarly rejected including the following:

Rao et al. does not teach:

"applying caseframes in interpreting the free text".

Gaizauskas et al. teaches:

"applying caseframes in interpreting the free text" (see [page 22, paragraph 3] and [page 23, first paragraph]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Rao et al. by the teaching of Gaizauskas et al. to add the feature of applying caseframes in interpreting step since both Rao et al. and Gaizauskas et al. pursue in the field of generating structured data from text and adding this feature provides more

Art Unit: 2164

effective system because it is well known in the art that conceptual natural language processing systems usually rely on case frame instantiation to recognize events and role objects in text and the case frames generate more cohesive output and produce fewer false hits than the original extraction patterns.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571) 272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PTC

January 25, 2007

Tule S. Hesson
Primary Examiner
Art Unit 2167